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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,484	11/17/2003	Simon Charles Watt	550-476	2208

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EXAMINER	
SEYE, ABDOU K	

ART UNIT	PAPER NUMBER
2194	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/714,484	WATT ET AL.	
	Examiner	Art Unit	
	Abdou Karim Seye	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :05/16/2006, 05/27/2004, 11/17/2003.

DETAILED ACTION

1. This is the initial office action based on the application filed on September 17, 2003. Claims 1-13 are currently pending and have been considered below.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.

Claim 7 is non statutory.The claimed system is constructed of software program instructions. Thus, the claimed apparatus comprising of processing logic is considered as software program containing machine-executable instructions, per se (and not associated with any physical structure). See MPEP 2106.01 - I: "...computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized... ".

Claims 8-12 are also rejected for failing to remedy the deficiencies of the above rejected non statutory claim 7.

Claim 13 is non statutory.The claimed product is constructed of software program instructions. Thus, the claimed product is considered as software program containing machine-executable instructions, per se (and not associated with any physical structure). See MPEP 2106.01 - I: "...computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized... ".

Appropriate corrections are required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that forms the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4, 6, 7-10, 12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by **Saito et al. (US 20050149933).**

Claims 1 and 7, Saito teaches a system, product and method of processing data with execution of data processing operations under control of either a first operating system or a second operating system, said method comprising the steps of:

receiving an interrupt operable to suspend execution of data processing operations (FIG. 10: 152, 153 and 174; interrupt hander for processing data denoting business use);

in response to said interrupt, starting a stub interrupt handling routine executing under control of said first operating system (FIG. 1: 110; BUSINESS-USE OS);

as commanded by said stub interrupt handling routine, suspending execution of said stub interrupt handling routine and starting a main interrupt handling routine executing under control of said second operating system (FIG.10: 111; REAL_TIME OS);

executing said main interrupt handling routine under control of said second operating system to handle said interrupt (FIG. 10; paragraph 104; performing interrupt handling);

as commanded by said main interrupt handling routine, resuming execution of said stub interrupt handling routine under control of said first operating system (FIG. 10; paragraph 104); and

as commanded by said stub interrupt handling routine, resuming said data processing operations, wherein if said main interrupt handling routine is interrupted by a further interrupt which when handled leaves processing under control of said first operating system, then said first operating system detects that said stub interrupt handling routine has been interrupted and resumes said stub interrupt handling so as to trigger resumption of said main interrupt handling routine (FIG. 10; paragraph 103; saving and restoring interruptions).

Claim 2, Saito teaches,

wherein when said interrupt occurs while data processing under said first operating system is suspended following data processing operations under control of said first operating system executing a call instruction calling data processing operations under control of said second operating system, said stub interrupt handling routine appears to said first operating system to be handling an interrupt which occurred during execution of said call instruction (FIG. 5; paragraph 70, 71 and 72; interruption associated with stopping the execution of tasks).

Claim 3, Saito further teaches,

wherein said resumption of data processing operations as commanded by said stub interrupt handling routine is performed by re-executing said call instruction (FIG. 5 : 154;paragraph 72; reschedulers of tasks).

Claim 4, Saito teaches, wherein said call instruction is a software interrupt instruction (FIG. 12; paragraph 120; interruption software module).

Claim 6, Saito teaches,

wherein switches between processing under control of said first operating system and processing under control of said second operating system take place via a monitor mode of operation executing a monitor mode program (FIG. 22; paragraph 156; monitoring module and the switching of operating system).

As per claims 8-10 and 12, they are rejected for the same reasons as the claims above.

As per claim 13, it is rejected for the same reason as the claims above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103 (a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 5 and 11 are rejected under 35 U.S.C. 103 (a) as being unpatentable over **Saito et al. (US 20050149933)** in view of **Worley et al. (US 20020194389).**

Claims 5 and 11, Saito teaches a system , product and method of processing data as in claims1 and 7 above , but he does teaches,

wherein said second operating system executes in a secure domain and said first operating system executes in a non-secure domain, wherein a data processing operations executing in said secure domain have access to secure data which is not accessible to a data processing operating executing in said non-secure domain. However, in the same field of endeavor; accessing data, Worley clearly discloses a system with an interruption mechanism including multiple operating systems executing in privilege and non-privilege platforms for accessing secret/secure data in hardware resources (abstract; FIG 15 and 17; paragraph 116-117). It would be obvious to one having ordinary skill in the art at the time the invention was made to modify Saito's invention with Worley's invention in order to provide a secure data processing environment comprising of multiple operating systems and to allow operating systems to freely employ encryption services of the system. One would have been motivated to define privileged and non-privileged domain platforms and instructions associated with memory management mechanisms in order to provide performance or to simplify the interface to a domain operating system (Worley's; paragraph 135).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure.

Umeno et al.(5392409) discloses a I/O execution method for virtual machine system and system therefor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Exr. Abdou Seye whose telephone number is (571) 270-1062. The examiner can normally be reached Monday through Friday from 7:30 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, contact the examiner's supervisor, William Thomson at (571) 272-3718. The fax phone number for formal or official faxes to Technology Center 3600 is (571) 273-8300. Draft or informal faxes, which will not be entered in the application, may be submitted directly to the examiner at (571) 273-6722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (571) 272-3600.

AKS
May 08,2007

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER